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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,630	06/17/2005	Yuichi Hikichi	63572(46342)	6756

21874 7590 01/02/2008

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EXAMINER	
ZARA, JANE J	

ART UNIT	PAPER NUMBER
1635	

MAIL DATE	DELIVERY MODE
01/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/539,630	HIKICHI ET AL.	
	Examiner	Art Unit	
	Jane Zara	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *5,7-17 and 20-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6-17-05, 2-1-06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: SEQ ALIGNMENT.

DETAILED ACTION

This Office action is in response to the communication filed 10-9-07.

Claims 1-27 are pending in the instant application.

Election/Restrictions

Claims 5, 7-17 and 20-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10-9-07.

Applicant's election without traverse of Group I, claims 1-4, 6, 18 and 19 in the reply filed on 10-9-07 is acknowledged.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4, 6, 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to prophylactic/ therapeutic and apoptotic inducing agents for cancer comprising any compound or its salt that inhibits the activity of any protein

comprising the substantially same sequence of SEQ ID NO. 1, or any partial peptide thereof, or comprising any compound that inhibits the expression of any gene encoding any substantially same amino acid sequence of SEQ ID NO. 1, or any partial peptide thereof.

The specification, prior art and claims do not adequately describe the broad genera of prophylactic, therapeutic and apoptotic compounds claimed. The specification teaches the detected overexpression of SEQ ID NO. 1 in various types of cancer cells or tissues, as well as teaching the cloning, recombinant expression using a full length construct, and siRNA inhibition of expression of SEQ ID NO. 1 in various cancer cells in vitro using a homologous siRNA construct. The specification and claims do not indicate what distinguishing attributes are concisely shared by the members of the genera comprising any compound that inhibits the activity of any protein with the substantially same sequence of SEQ ID NO. 1, or any partial peptide thereof, nor do they indicate the attributes concisely shared by members comprising any compound that inhibits the expression of any gene encoding any substantially same amino acid sequence of SEQ ID NO. 1, or encoding any partial peptide thereof.

Nor does the specification describe elements which are essential to various functions claimed for each genus, and which provide for the functions claimed, or providing prophylactic, therapeutic or apoptotic inducing effects for any cancer. The specification does not place any limit on the number of nucleic acid or amino acid substitutions, deletions, insertions and/or additions that may be made within each genus claimed. The scope of the claims includes numerous structural variants, and each

genus is highly variant because a significant number structural differences between genus members is permitted. Concise structural features that could distinguish compounds from others in each broad genus are missing from the disclosure.

Furthermore, the specification fails to teach or adequately describe a representative number of species in each genus such that the common attributes or characteristics concisely identifying members of each proposed genus are exemplified. And the general knowledge and level of skill in the art do not supplement the omitted description because specific, not general, guidance is what is needed (e.g. what fragments of SEQ ID NO. 1 provide for the associated cancerous phenotype upon overexpression?). Since the disclosure fails to describe the common attributes or characteristics concisely identifying members of the proposed genera, and because each genus is highly variant, the description provided for each genus is insufficient. One of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the genera claimed. Thus, applicant was not possession of the claimed genera.

Claims 1-4, 6, 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for cloning, recombinant expression and siRNA inhibition of expression of SEQ ID NO. 1 in various cancer cells in vitro using homologous siRNA constructs, does not reasonably provide enablement for providing prophylaxis, treatment and apoptotic inducing effects for any cancer or cancer cell in an organism comprising any compound that inhibits the activity of any protein with the

substantially same sequence of SEQ ID NO. 1, or any partial peptide thereof, nor using any compound that inhibits the expression of any gene encoding any substantially same amino acid sequence of SEQ ID NO. 1, or encoding any partial peptide thereof. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims are drawn to prophylactic/ therapeutic and apoptotic inducing agents for cancer or cancer cells comprising any compound or its salt that inhibits the activity of any protein comprising the substantially same sequence of SEQ ID NO. 1, or any partial peptide thereof, or comprising any compound that inhibits the expression of any gene encoding any substantially same amino acid sequence of SEQ ID NO. 1, or any partial peptide thereof.

The following factors have been considered in determining that the specification does not enable the skilled artisan to make and/or use the invention over the scope claimed.

The state of the prior art and the predictability or unpredictability of the art. The following references are cited herein to illustrate the state of the art of nucleic acid prophylaxis and treatment or cancers in organisms. Branch and Crooke teach that the in vivo (whole organism) application of nucleic acids is a highly unpredictable endeavor due to target accessibility and delivery issues. Crooke also points out that cell culture examples are generally not predictive of in vivo success. (A. Branch, Trends in

Biochem. Sci. 23: 45-50; *see* entire text for Branch; S. Crooke, Antisense Res. and Application, Chapter 1, pp. 1-50, especially at 34-36).

Likewise, Peracchi cautions investigators in the field of gene therapy about the problems of achieving in vivo efficacy using nucleic acid based approaches. Peracchi cites stability and delivery obstacles that need to be overcome in achieving desired in vivo efficacy: "A crucial limit of ribozymes in particular, and of oligonucleotide-based drugs in general, lies in their intrinsically low ability to cross biological membranes, and therefore to enter the cells where they are supposed to operate...cellular uptake following systemic administration appears to require more sophisticated formulations... the establishment of delivery systems that mediate efficient cellular uptake and sustained release of the ribozyme remains one of the major hurdles in the field." (A. Peracchi et al, Rev. Med. Virol., 14: 47-64, especially at 51).

Agrawal et al also speak to the unpredictable nature of the nucleic acid based therapy field thus: "It is therefore appropriate to study each ... oligonucleotide in its own context, and relevant cell line, without generalizing the results for every oligonucleotide (S. Agrawal et al., Molecular Med. Today, 6: 72-81 at 80). Cellular uptake of oligonucleotides by appropriate target cells is another rate limiting step that has yet to be overcome in achieving predictable clinical efficacy using antisense." Both Chirila et al and Agrawal et al point to the current limitations which exist in our understanding of the cellular uptake of nucleic acids in sufficient amounts to effect a phenotype or desired effect in vitro and in vivo (see Agrawal et al especially at pages 79-80; *see* Chirila et al., Biomaterials, 23: 321-342 in its entirety, especially at 326-327 for a general review of

the important and inordinately difficult challenges of the delivery of therapeutic nucleic acids to target cells).

See also the discussion by Opalinska et al of unpredictability of nucleic acid therapy, including the use of siRNA and antisense in vivo (Opalinska et al, Nature Rev., 1: 503-514, at 503 and 511). "Although conceptually elegant, the prospect of using nucleic-acid molecules for treating human malignancies and other diseases remains tantalizing, but uncertain... The main cause of this uncertainty is the apparent randomness with which these materials modulate the expression of their intended targets. It is a widely held view that molecule delivery, and selection of which messenger RNA sequence to physically target, are core stumbling blocks that hold up progress in the field. ...it is widely appreciated that the ability of nucleic-acid molecules to modify gene expression in vivo is quite variable, and therefore wanting in terms of reliability." [references omitted].

The amount of direction or guidance presented in the specification AND the presence or absence of working examples. Applicants have not provided guidance in the specification toward methods of preventing any cancer, or of treating the broad genus of cancers claimed comprising any compound that inhibits the activity of any protein with the substantially same sequence of SEQ ID NO. 1, or any partial peptide thereof, nor do they indicate the attributes concisely shared by members comprising any compound that inhibits the expression of any gene encoding any substantially same amino acid sequence of SEQ ID NO. 1, or encoding any partial peptide thereof.

The specification teaches detecting the overexpression of SEQ ID NO. 1 in various types of cancer cells or tissues, as well as teaching the cloning, recombinant expression of the full length construct, and siRNA inhibition of expression of SEQ ID NO. 1 in various cancer cells in vitro using a homologous siRNA construct. The specification and claims do not teach the use of the broad genera of compounds claimed, nor do they indicate what distinguishing attributes are concisely shared by the members of the genera comprising any compound that inhibits the activity of any protein with the substantially same sequence of SEQ ID NO. 1, or any partial peptide thereof, nor do they indicate the attributes concisely shared by members comprising any compound that inhibits the expression of any gene encoding any substantially same amino acid sequence of SEQ ID NO. 1, or encoding any partial peptide thereof.

One skilled in the art would not accept on its face the examples provided in the instant disclosure of the cloning, expression and siRNA mediated inhibition of SEQ ID NO. 1 as being correlative or representative of the ability to prevent and treat any cancer using the broad genera of compositions claimed in view of the lack of guidance in the specification and the known unpredictability associated with the ability to properly deliver adequate quantities of these inhibitory compounds to appropriate target cells in an organism.

The breadth of the claims and the quantity of experimentation required. The breadth of the claims is very broad. The claims are drawn to prophylactic/ therapeutic and apoptotic agents for cancer comprising any compound or its salt that inhibits the activity of any protein comprising the substantially same sequence of SEQ

ID NO. 1, or any partial peptide thereof, or comprising any compound that inhibits the expression of any gene encoding any substantially same amino acid sequence of SEQ ID NO. 1, or any partial peptide thereof.

The quantity of experimentation required to practice the invention as claimed would require the *de novo* determination of the ability to prevent and treat a representative number of cancers in an organism using a representative number of species of each broadly claimed genus of compounds. Since the specification fails to provide any particular guidance for the successful prevention and treatment of a representative number of cancers using the compounds encompassed by the broad genera claimed, and since determination of the factors required for accomplishing these treatment and prophylactic effects is highly unpredictable, it would require undue experimentation to practice the invention over the broad scope claimed.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be

patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-4, 6, 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Isogai et al (USPN 6,943,241).

Isogai et al (USPN 6,943,241) teach compounds that inhibit the expression and/or activity of a protein comprising the substantially same sequence encoded by SEQ ID NO. 1 or fragment thereof (see the abstract; col. 1-4, Table I, esp. col. 22, col. 78-81, SEQ ID NO. 3162 and the accompanying sequence alignment data). The burden of establishing whether the prior art compounds have the function of inhibiting gene expression or protein activity as claimed falls to applicant. See (In re Best, 562

F.2d 1252, 1255, 195 USPQ 430, 433-434 (CCPA 1977): "Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product... Whether the rejection is based on 'inherency' under 35 USC 102, on 'prima facie obviousness' under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced b the PTO's inability to manufacture products or to obtain and compare prior art products." [footnote omitted] See also MPEP 2112: "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [her] claimed product." The MPEP at 2112 citing In re Fitzgerald 205 USPQ 594, 596 (CCPA 1980), quoting In re Best 195 USPQ 430 as per above. Therefore, absent evidence to the contrary, since the compounds disclosed by Isogai et al meet all of the structural limitations of the instantly claimed invention, it would necessarily be presumed to have the functionality claimed, of inhibiting expression of the target gene encoding SEQ ID No. 1 and preventing, treating and inducing apoptosis of the cancers claimed.

Therefore, absent evidence to the contrary, claims 1-4, 6, 18 and 19 are anticipated by or, in the alternative, obvious over Isogai et al.

Claims 1-4, 6, 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jenuwein et al (USPN 6,689,583).

Jenuwein et al (USPN 6,689,583) teach compounds that inhibit the expression and/or activity of a protein comprising the substantially same sequence encoded by SEQ ID NO. 1 or fragment thereof (see the abstract; col. 1-4, 8-12, 13, 14, SEQ ID NO. 2 and the accompanying sequence alignment data). The burden of establishing whether the prior art compounds have the function of inhibiting gene expression or protein activity as claimed falls to applicant. See (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-434 (CCPA 1977): "Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product... Whether the rejection is based on 'inherency' under 35 USC 102, on 'prima facie obviousness' under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced b the PTO's inability to manufacture products or to obtain and compare prior art products." [footnote omitted] See also MPEP 2112: "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [her] claimed product." The MPEP at 2112 citing In re Fitzgerald 205 USPQ 594, 596 (CCPA 1980), quoting In re Best 195 USPQ 430 as per above. Therefore, absent evidence to the contrary, since the compounds disclosed by Jenuwein et al meet all of the structural limitations of the instantly claimed invention, it would necessarily be presumed to have the functionality claimed, of inhibiting expression of the target gene encoding SEQ ID No. 1 and preventing, treating and inducing apoptosis of the cancers claimed.

Therefore, absent evidence to the contrary, claims 1-4, 6, 18 and 19 are anticipated by or, in the alternative, obvious over Jeuwein et al.

Claims 1-4, 6, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jenuwein et al (WO 96/35784).

Jenuwein et al (WO 96/35784) teach compounds that inhibit the expression and/or activity of a protein comprising the substantially same sequence encoded by SEQ ID NO. 1 or fragment thereof (see the abstract; Figure 7, claim 12, Accession NO. AAW05260 and the accompanying sequence alignment data). The burden of establishing whether the prior art compounds have the function of inhibiting gene expression or protein activity as claimed falls to applicant. See (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-434 (CCPA 1977): "Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product... Whether the rejection is based on 'inherency' under 35 USC 102, on 'prima facie obviousness' under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced b the PTO's inability to manufacture products or to obtain and compare prior art products." [footnote omitted] See also MPEP 2112: "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [her] claimed product." The

MPEP at 2112 citing In re Fitzgerald 205 USPQ 594, 596 (CCPA 1980), quoting In re Best 195 USPQ 430 as per above. Therefore, absent evidence to the contrary, since the compounds disclosed by Jenuwein et al meet all of the structural limitations of the instantly claimed invention, it would necessarily be presumed to have the functionality claimed, of inhibiting expression of the target gene encoding SEQ ID No. 1 and preventing, treating and inducing apoptosis of the cancers claimed.

Therefore, absent evidence to the contrary, claims 1-4, 6, 18 and 19 are anticipated by or, in the alternative, obvious over Jeuwein et al.

Conclusion

Certain papers related to this application may be submitted to Art Unit 1635 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. ' 1.6(d)). The official fax telephone number for the Group is 571-273-8300. NOTE: If Applicant does submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Zara whose telephone number is (571) 272-0765. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Douglas Schultz, can be reached on (571) 272-0763. Any inquiry of

a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jane Zara
12-31-07

JZ TC1600

JANE ZARA, PH.D.
PRIMARY EXAMINER

SEQ ALIGNMENTS MAIC.
PLEASE SCAN ←

RESULT 3
AAW05260
ID AAW05260 standard; protein; 746 AA.
XX
AC AAW05260;
XX
DT 15-JUN-2007 (revised)
DT 25-MAR-2003 (revised)
DT 05-MAY-1997 (first entry)
XX
DE Chromatin regulator protein EZH2.
XX
KW Chromating; regulator; EZH1; EZH2; SUV39H; SET domain; gene therapy;
KW cancer; BOND_PC; enhancer of zeste homolog 2 (Drosophila), isoform CRA_c;
KW enhancer of zeste homolog 2 (Drosophila), isoform CRA_c [Homo sapiens];
KW enhancer of zeste homolog 2; GO3677; GO5515; GO5634; GO6325; GO6350;
KW GO6355; GO35098; GO42054.
XX
OS Homo sapiens.
XX
PN WO9635784-A2.
XX
PD 14-NOV-1996.
XX
PF 02-MAY-1996; 96WO-EP001818.
XX
PR 10-MAY-1995; 95DE-01016776.
XX
PA (BOEH) BOEHRINGER INGELHEIM INT GMBH.
XX
PI Jenuwein T, Laible G;
XX
DR WPI; 1996-518672/51.
DR N-PSDB; AAT43624.
DR PC:NCBI; gi3334180.
DR PC:SWISSPROT; Q15910.
XX
PT New DNA encoding chromatin regulator protein with SET domain - and
PT related vectors, transformed cells, proteins and antibodies, for
PT diagnosis and treatment of cancer.
XX
PS Claim 12; Fig 7; 38pp; German.
XX
CC The DNA was isolated by screening a human B cell cDNA library with mixed
CC Drosophila DNA probes based on the conserved SET domains in E(z) and
CC Su(var)3-9. The DNA, and its products, are useful in therapy (esp. gene

CC therapy) and diagnosis of human diseases that involve deregulated
CC chromatin-regulator genes having a SET domain, esp. cancer. (Updated on
CC 25-MAR-2003 to correct PR field.)
CC
CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
CC information from BOND.
XX
SQ Sequence 746 AA;

Query Match 98.8%; Score 4030.5; DB 2; Length 746;
Best Local Similarity 99.2%; Pred. No. 0;
Matches 745; Conservative 0; Mismatches 1; Indels 5; Gaps 1;

Qy 1
MGQTGKKSEKGPVCWRKRVKSEYMRLRQLKRFRRADEVKSMFSSNRQKILERT
EILNQEW 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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EILNQEW 60

Qy 61
KQRRIQPVHILTSVSSLRGTRECSVTSDLDFPTQVIPLKTLNAVASVPIMYSWSPL
QQNF 120
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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QQNF 120

Qy 121
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NALGQ 180
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MVEDETVLHNIPYMGDEVLDQDGTFIEELIKNYDGKVHGDRECGFINDEIFVELV
NALGQ 180

Qy 181
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GTAEEL 240
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181
YNDDDDDDDGDDPEEREEKQKDLEDHRDDKESRPPRKFPSDKIFEAISSMFPDK
GTAEEL 240

Qy 241
KEKYKELTEQQLPGALPPECTPNIDGPNAKSVQREQSLHSFHTLFCRRCFKYDCF
LHRKC 300

Db 241
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LH--- 297

Qy 301
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PGGRRR 360

Db 298 --
PFHATPNTYKRKNTETALDNKPCGPQCYQHLEGAKEFAAALTAERIKTPPKRPG
GRRR 355

Qy 361
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SRCQ 420

Db 356
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SRCQ 415

Qy 421
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VKESS 480

Db 416
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VKESS 475

Qy 481
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CDSSCP 540

Db 476
IIAPAPAEDVDTPPRKKKRKHRLWAAHCRKIQLKKDGSSNHVYNYQPCDHPRQP
CDSSCP 535

Qy 541
CVIAQNFCEKFCQCSSECQNRFPGCRCKAQCNTKQCPCYLAVRECDPDLCLTCG
AADHWD 600

Db 536
CVIAQNFCEKFCQCSSECQNRFPGCRCKAQCNTKQCPCYLAVRECDPDLCLTCG
AADHWD 595

Qy 601
SKNVSCKNCSIQRGSKKHLLLAPSDVAGWGIFIKDPVQKNEFISEYCGEIISQDEA
DRRG 660
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 596
SKNVSCKNCSIQRGSKKHLLLAPSDVAGWGIFIKDPVQKNEFISEYCGEIISQDEA
DRRG 655

Qy 661
KVYDKYMCSFLFNLNNDFVVDATRKGNKIRFANHSVNPNCYAKVMMVNGDHR
IGIFAKRA 720
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 656
KVYDKYMCSFLFNLNNDFVVDATRKGNKIRFANHSVNPNCYAKVMMVNGDHR
IGIFAKRA 715

Qy 721 IQTGEELFFDYRYSQADALKYVGIEREMEIP 751
||||||||||||||||||||||||||||||
Db 716 IQTGEELFFDYRYSQADALKYVGIEREMEIP 746

US-10-104-047-3162
; Sequence 3162, Application US/10104047
; Patent No. 6943241
; GENERAL INFORMATION:
; APPLICANT: HELIX RESEARCH INSTITUTE
; TITLE OF INVENTION: No. 6943241el full length cDNA
; FILE REFERENCE: H1-A0105
; CURRENT APPLICATION NUMBER: US/10/104,047
; CURRENT FILING DATE: 2002-03-25
; PRIOR APPLICATION NUMBER:
; PRIOR FILING DATE:
; NUMBER OF SEQ ID NOS: 4096
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 3162
; LENGTH: 707
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-104-047-3162

Query Match 92.9%; Score 3792; DB 2; Length 707;
Best Local Similarity 93.9%; Pred. No. 3.1e-312;
Matches 705; Conservative 0; Mismatches 2; Indels 44; Gaps 2;

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Qy       1
MGQTGKKSEKGPVCWRKRVKSEYMRLRQLKRFRRADEVKSMFSSNRQKILERT
EILNQEW 60
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Db       1
MGQTGKKSEKGPVCWRKRVKSEYMRLRQLKRFRRADEVNSMFSSNRQKILERT
EILNQEW 60

Qy      61
KQRRIQPVHILTSVSSLRGTRECSVTSDLDFPTQVIPLKTLNAVASVPIMYSWSPL
QQNF 120
         ||||||||||||||||||
Db      61 KQRRIQPVHILTSVSSLRGTRE---------------------------------- 82

Qy     121
MVEDETVLHNIPYMGDEVLDQDGTFIEELIKNYDGKVHGDRECGFINDEIFVELV
NALGQ 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      83 -
VEDETVLHNIPYMGDEVLDQDGTFIEELIKNYDGKVHGDRECGFINDEIFVELVN
ALGQ 141
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Qy 181
YNDDDDDDDGDDPEEREEKQKDLEDHRDDKESRPPRKFPSDKIFEAISSMFPDK
GTAEEL 240

Db 142
YNDDDDDDDGDDPEEREEKQKDLEDHRDDKESRPPRKFPSDKIFEAISSMFPDK
GTAEEL 201

Qy 241
KEKYKELTEQQLPGALPPECTPNIDGPNAKSVQREQSLHSFHTLFCRRCFKYDCF
LHRKC 300

Db 202
KEKYKELTEQQLPGALPPECTPNIDGPNAKSVQREQSLHSFHTLFCRRCFKYDCF
LH--- 258

Qy 301
NYSFHATPNTYKRKNTETALDNKPCGPQCYQHLEGAKEFAAALTAERIKTPPKR
PGGRRR 360

Db 259 --
PFHATPNTYKRKNTETALDNKPCGPQCYQHLEGAKEFAAALTAERIKTPPKRPG
GRRR 316

Qy 361
GRLPNNSSRPSTPTINVLESKDTDSDREAGTETGGENNDKEEEEKKDETSSSSEAN
SRCQ 420

Db 317
GRLPNNSSRPSTPTINVLESKDTDSDREAGTETGGENNDKEEEEKKDETSSSSEAN
SRCQ 376

Qy 421
TPIKMKPNIEPPENVEWSGAEASMFRVLIGTYYDNFCAIARLIGTKTCRQVYEFR
VKESS 480

Db 377
TPIKMKPNIEPPENVEWSGAEASMFRVLIGTYYDNFCAIARLIGTKTCRQVYEFR
VKESS 436

Qy 481
IIAPAPAEDVDTPPRKKKRKHRLWAAHCRKIQLKKDGSSNHVYNYQPCDHPRQP
CDSSCP 540

Db 437
IIAPAPAEDVDTPPRKKKRKHRLWAAHCRKIQLKKDGSSNHVYNYQPCDHPRQP
CDSSCP 496

Qy 541
CVIAQNFCEKFCQCSSECQNRFPGCRCKAQCNTKQCPCYLAVRECDPDLCLTCG
AADHWD 600

Db 497
CVIAQNFCEKFCQCSSECQNRFPGCRCKAQCNTKQCPCYLAVRECDPDLCLTCG
AADHWD 556

Qy 601
SKNVSCKNCSIQRGSKKHLLLAPSDVAGWGIFIKDPVQKNEFISEYCGEIISQDEA
DRRG 660

Db 557
SKNVSCKNCSIQRGSKKHLLLAPSDVAGWGIFIKDPVQKNEFISEYCGEIISQDEA
DRRG 616

Qy 661
KVYDKYMCSFLFNLNNDFVVDATRKGNKIRFANHSVNPNCYAKVMMVNGDHR
IGIFAKRA 720

Db 617
KVYDKYMCSFLFNLNNDFVVDATRKGNKIRFANHSVNPNCYAKVMMVNGDHR
IGIFAKRA 676

Qy 721 IQTGEELFFDYRYSQADALKYVGIEREMEIP 751

Db 677 IQTGEELFFDYRYSQADALKYVGIEREMEIP 707

RESULT 1
US-09-589-892B-2
; Sequence 2, Application US/09589892B
; Patent No. 6689583
; GENERAL INFORMATION:
; APPLICANT: Jenuwein, Thomas
; APPLICANT: Laible, Gotz
; APPLICANT: O'Carroll, Donal
; APPLICANT: Eisenhaber, Frank
; APPLICANT: Rea, Stephen
; TITLE OF INVENTION: Chromatin-Regulator Genes
; FILE REFERENCE: 0652.1670001
; CURRENT APPLICATION NUMBER: US/09/589,892B
; CURRENT FILING DATE: 2000-06-09
; PRIOR APPLICATION NUMBER: US 08/945,988
; PRIOR FILING DATE: 1997-11-10
; PRIOR APPLICATION NUMBER: PCT/EP96/01818
; PRIOR FILING DATE: 1996-05-02
; PRIOR APPLICATION NUMBER: DE 195 16 776.7
; PRIOR FILING DATE: 1995-05-10
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 2
; LENGTH: 746
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-589-892B-2

Query Match 98.8%; Score 4030.5; DB 2; Length 746;
Best Local Similarity 99.2%; Pred. No. 0;
Matches 745; Conservative 0; Mismatches 1; Indels 5; Gaps 1;

Qy 1
MGQTGKKSEKGPVCWRKRVKSEYMRLRQLKRFRRADEVKSMFSSNRQKILERT
EILNQEW 60
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Db 1
MGQTGKKSEKGPVCWRKRVKSEYMRLRQLKRFRRADEVKSMFSSNRQKILERT
EILNQEW 60

Qy 61
KQRRIQPVHILTSVSSLRGTRECSVTSDLDFPTQVIPLKTLNAVASVPIMYSWSPL
QQNF 120
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Db 61
KQRRIQPVHILTSVSSLRGTRECSVTSDLDFPTQVIPLKTLNAVASVPIMYSWSPL
QQNF 120

Qy 121
MVEDETVLHNIPYMGDEVLDQDGTFIEELIKNYDGKVHGDRECGFINDEIFVELV
NALGQ 180

Db 121
MVEDETVLHNIPYMGDEVLDQDGTFIEELIKNYDGKVHGDRECGFINDEIFVELV
NALGQ 180

Qy 181
YNDDDDDDDGDDPEEREEKQKDLEDHRDDKESRPPRKFPSDKIFEAISSMFPDK
GTAEEL 240

Db 181
YNDDDDDDDGDDPEEREEKQKDLEDHRDDKESRPPRKFPSDKIFEAISSMFPDK
GTAEEL 240

Qy 241
KEKYKELTEQQLPGALPPECTPNIDGPNAKSVQREQSLHSFHTLFCRRCFKYDCF
LHRKC 300

Db 241
KEKYKELTEQQLPGALPPECTPNIDGPNAKSVQREQSLHSFHTLFCRRCFKYDCF
LH--- 297

Qy 301
NYSFHATPNTYKRKNTETALDNKPCGPQCYQHLEGAKEFAAALTAERIKTPPKR
PGGRRR 360

Db 298 --
PFHATPNTYKRKNTETALDNKPCGPQCYQHLEGAKEFAAALTAERIKTPPKRPG
GRRR 355

Qy 361
GRLPNNSSRPSTPTINVLESKDTDSDREAGTETGGENNDKEEEEKKDETSSSSEAN
SRCQ 420

Db 356
GRLPNNSSRPSTPTINVLESKDTDSDREAGTETGGENNDKEEEEKKDETSSSSEAN
SRCQ 415

Qy 421
TPIKMKPNIEPPENVEWSGAEASMFRVLIGTYYDNFCAIARLIGTKTCRQVYEFR
VKESS 480

Db 416
TPIKMKPNIEPPENVEWSGAEASMFRVLIGTYYDNFCAIARLIGTKTCRQVYEFR
VKESS 475

Qy 481
IIAPAPAEDVDTPPRKKKRKHRLWAAHCRKIQLKKDGSSNHVYNYQPCDHPRQP
CDSSCP 540

Db 476
IIAPAPAEDVDTPPRKKKRKHRLWAAHCRKIQLKKDGSSNHVYNYQPCDHPRQP
CDSSCP 535

Qy 541
CVIAQNFCEKFCQCSSECQNRFPGCRCKAQCNTKQCPCYLAVRECDPDLCLTCG
AADHWD 600

Db 536
CVIAQNFCEKFCQCSSECQNRFPGCRCKAQCNTKQCPCYLAVRECDPDLCLTCG
AADHWD 595

Qy 601
SKNVSCKNCSIQRGSKKHLLLAPSDVAGWGIFIKDPVQKNEFISEYCGEIISQDEA
DRRG 660

Db 596
SKNVSCKNCSIQRGSKKHLLLAPSDVAGWGIFIKDPVQKNEFISEYCGEIISQDEA
DRRG 655

Qy 661
KVYDKYMCSFLFNLNNDFVVDATRKGNKIRFANHSVNPNCYAKVMMVNGDHR
IGIFAKRA 720

Db 656
KVYDKYMCSFLFNLNNDFVVDATRKGNKIRFANHSVNPNCYAKVMMVNGDHR
IGIFAKRA 715

Qy 721 IQTGEELFFDYRYSQADALKYVGIEREMEIP 751

Db 716 IQTGEELFFDYRYSQADALKYVGIEREMEIP 746

RESULT 2